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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/925,740	08/10/2001	Takuya Yamamoto	2922-108	6658

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ROTHWELL, FIGG, ERNST & MANBECK, P.C.
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SUITE 800
WASHINGTON, DC 20005

EXAMINER

NGUYEN, KHIEM D

ART UNIT	PAPER NUMBER
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2823

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	03/19/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 03/19/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTO-PAT-Email@rfem.com

Office Action Summary

Application No.

09/925,740

Applicant(s)

YAMAMOTO ET AL.

Examiner

Khiem D. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5-22 and 30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5-8, 11-14, 17-20 and 30 is/are rejected.
- 7) ☒ Claim(s) 9, 10, 15, 16, 21 and 22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

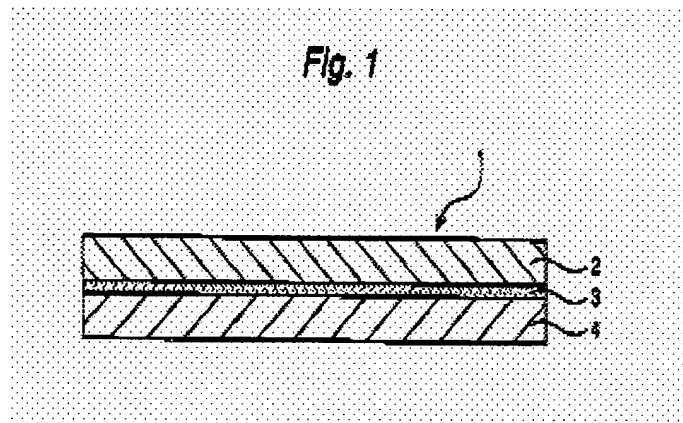
(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 5-8, 11-14, 17-20 and 30 are rejected under 35 U.S.C. 102(e) as being anticipated by Kataoka et al. (U.S. Patent 6,270,889).

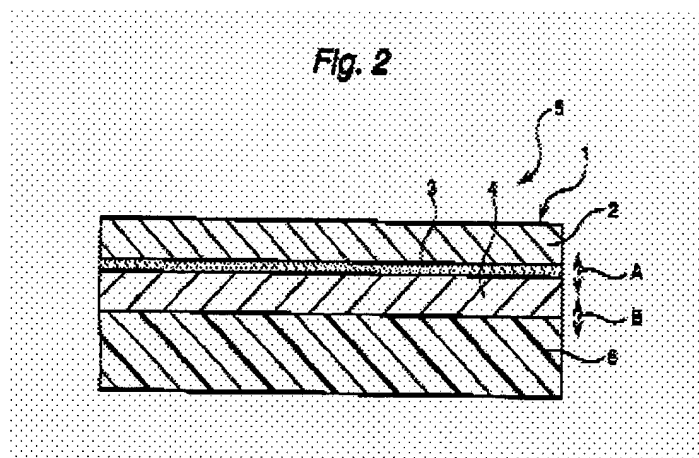
The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention “by another,” or by an appropriate showing under 37 CFR 1.131.

In re claim 5, **Kataoka** discloses a process for producing a copper clad laminate comprising, providing an insulation layer 3 constituent material having a first and a second side (bottom and top sides), coating the first side (bottom side) with a first copper foil 4 of a first thickness (12 μ m (col. 5, line 27)), coating the second side (top side) with a second copper foil 2 of a second thickness (5mm (col. 5, lines 13-14)) to produce an insulation layer constituent material, first copper foil 4 and second copper foil 2

assembly, wherein the thickness of the second foil 2 (5mm) is greater than the thickness of the first foil 4 (12 μ m) (col. 5, lines 2-28 and FIG. 1),



hot pressing the assembly to produce the laminate, wherein the first copper foil 4 is not recrystallized during the hot pressing, and wherein the second copper foil 2 is recrystallized during the hot pressing (col. 7, lines 52-65 and FIG. 2).

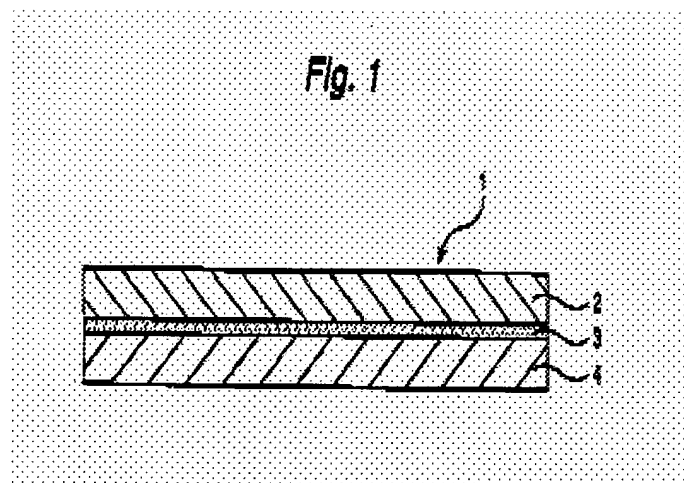


In re claim 6, as applied to claim 5 above, Kataoka discloses all claimed limitations including the limitation wherein the thickness of the second foil 2 (18-70 μ m, col. 5, line 10) is four times or less than the thickness of the first foil 4 (12 μ m, col. 5, line 27).

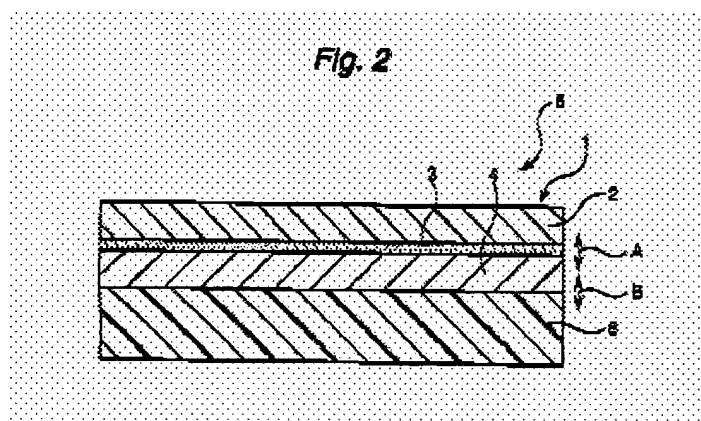
In re claim 7, as applied to claim 5 above, Kataoka discloses all claimed limitations including the limitation wherein the insulation layer 3 constituent material is a resin (col. 5, lines 35-50).

In re claim 8, as applied to claim 5 above, Kataoka discloses all claimed limitations including the limitation wherein the second copper foil 2 contracts about 0.05% under pressing conditions of 175-200°C and 1 hr (col. 7, lines 58-65).

In re claim 11, Kataoka discloses a process for producing a copper clad laminate comprising, providing an insulation layer 3 constituent material having a first (bottom side) and a second side (top side), coating the first side with a first copper foil 4 of a first thickness (12 μm (col. 5, line 27)), coating the second side with a second copper foil 2 of a second thickness (5mm (col. 5, lines 13-14)) to produce an insulation layer constituent material, first copper foil 4 and second copper 2 foil assembly, wherein the thickness of the second foil 2 (5mm) is greater than the thickness of the first foil 4 (18 μm) (col. 5, lines 2-28 and FIG. 1),



hot pressing the assembly to produce the laminate, wherein the first 4 and second 2 copper foils are recrystallized during the hot pressing, wherein the second copper foil 2 is more recrystallized than the first 4 copper foil (col. 7, lines 52-65 and FIG. 2).



In re claim 12, as applied to claim 11 above, **Kataoka** discloses all claimed limitations including the limitation wherein the thickness of the second foil 2 (18-70 μm , col. 5, line 10) is four times or less than the thickness of the first foil 4 (12 μm , col. 5, line 27).

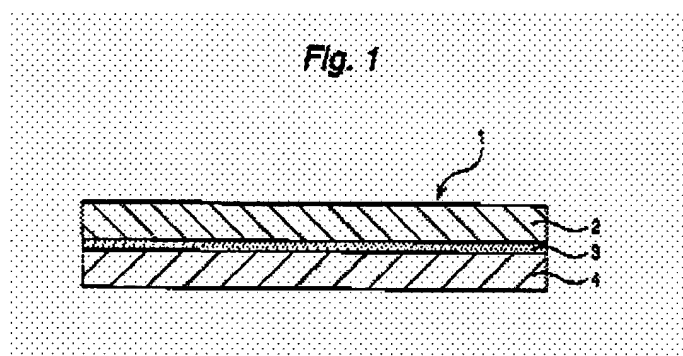
In re claim 13, as applied to claim 11 above, **Kataoka** discloses all claimed limitations including the limitation wherein the insulation layer 3 constituent material is a resin (col. 5, lines 35-50).

In re claim 14, as applied to claim 11 above, **Kataoka** discloses all claimed limitations including the limitation wherein the second copper foil 3 contracts about 0.05% under pressing conditions of 175-200°C and 1 hr (col. 7, lines 58-65).

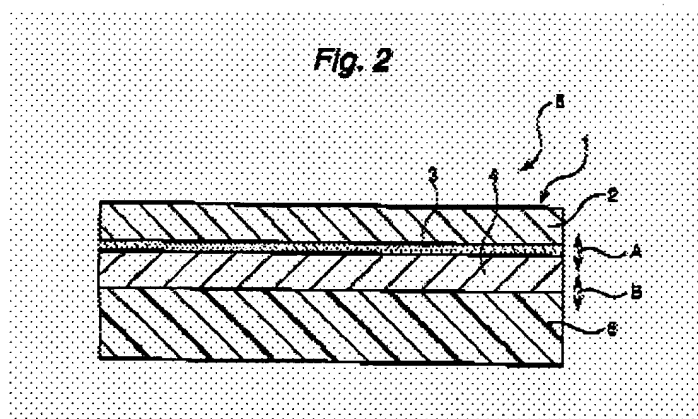
In re claim 17, **Kataoka** discloses a process for producing a copper clad laminate, providing an insulation layer constituent material 3 having a first (bottom surface) and a second side (top surface), coating the first side with a first copper foil 4 of a first

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thickness (12 μm , col. 5, line 27), coating the second side (top surface) with a second copper foil 2 of a second thickness (5mm, col. 5, lines 13-14) to produce an insulation layer constituent material, first copper foil 4 and second copper foil 4 assembly, wherein the thickness of the second foil 2 (5 mm) is greater than the thickness of the first foil 4 (12 μm) (col. 5, lines 2-28 and FIG. 1,



hot pressing the assembly to produce the laminate, wherein the first 4 and second 2 copper foils contract during hot pressing, wherein the second copper 2 foil inherently contracts to a larger extent than the first copper foil 4 during hot pressing (col. 7, lines 52-65 and FIG. 2).



In re claim 18, as applied to claim 17 above, Kataoka discloses all claimed limitations including the limitation wherein the thickness of the second foil 2 (18-70 μm ,

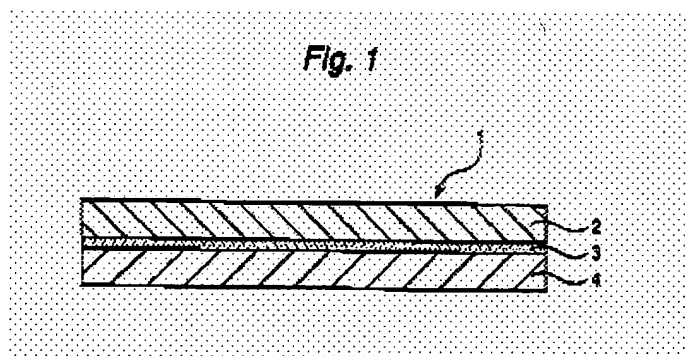
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col. 5, line 10) is four times or less than the thickness of the first foil 4 (12 μ m, col. 5, line 27).

In re claim 19, as applied to claim 17 above, Kataoka discloses all claimed limitations including the limitation wherein the insulation layer 3 constituent material is a resin (col. 5, lines 35-50).

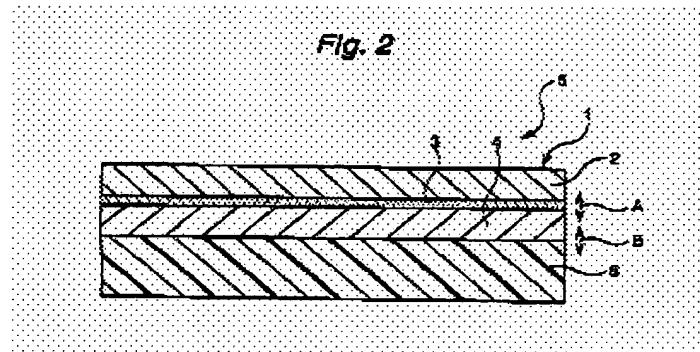
In re claim 20, as applied to claim 17 above, Kataoka discloses all claimed limitations including the limitation wherein the second copper foil 3 contracts about 0.05% under pressing conditions of 175-200°C and 1 hr (col. 7, lines 58-65).

In re claim 30, Kataoka discloses a method of reducing warping of a copper clad laminate during production thereof, said method comprising the steps of: coating a first side of an insulation layer 3 with a first copper foil 4, coating a second side of said insulation layer 3 with a second copper foil 2, wherein said second copper foil 2 (5mm, col. 5, lines 13-14) is thicker than said first copper foil 4 (12 μ m, col. 5, line 27) (col. 5, lines 2-28 and FIG. 1),



and said second copper foil 2 is more recrystallizable than said first copper foil 4 at a pressing temperature (175-200° C) (col. 7, lines 58-65), and hot pressing said first 4 and second 2 copper foils to said insulation layer 3 at said pressing temperature, thereby

reducing warping of said copper clad laminate during production thereof (col. 7, lines 52-65 and FIG. 2).



Allowable Subject Matter

3. Claims 9, 10, 15, 16, 21, and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Applicants' Amendment and Arguments

4. Applicants' arguments filed on January 3rd, 2007 have been fully considered but they are not persuasive.

Applicants contend that reference Kataoka et al. (U.S. Patent 6,270,889), herein known as Kataoka does not teach or suggest wherein the first copper foil is not recrystallized during the hot pressing, and wherein the second copper foil is recrystallized during the hot pressing as recited in independent claim 5 and wherein the second copper foil is more recrystallized than the first copper foil as recited in independent claim 11.

In response to Applicants' contention that Kataoka does not teach or suggest wherein the first copper foil is not recrystallized during the hot pressing, and wherein the second copper foil is recrystallized during the hot pressing, Examiner respectfully

disagrees. Since the Applicants' claimed invention does not specify how the hot pressing step affect the characteristic of the first and second copper foils, the Examiner notes that the claims are given the broadest interpretation and in so providing a broad reasonable interpretation. Therefore, the Examiner respectfully submits that Kataoka teaches the Applicants' claimed invention because in (col. 7, lines 52-65 and FIG. 2), Kataoka discloses a process for producing a copper clad laminate comprising hot pressing under the condition of 175-200° C the first copper foil 4 and second copper foil 2 assembly to produce a laminate structure. This temperature range for hot pressing of Kataoka is equivalent to the hot pressing temperature of the Applicants' invention, which is 180° C (see Applicants' specification on page 16, lines 4-10). Thus, the disclosed process as taught by Kataoka would obtain the recited results (i.e., "wherein the first...is not recrystallized...and...the second...is recrystallized..." and "wherein the second...is more recrystallized than the first...") because the same materials are being treated in the same manner as in the instant claimed invention. Furthermore, base on Kataoka teachings, at least one of the first and second copper foils would be recrystallized when it contacts the hot plate during hot pressing process, the other copper foil layer is either away from or not being direct contact with the hot plate and thus not recrystallized or less recrystallized than the at least one of the first and second copper foils.

In response to Applicants' contention that Kataoka does not teach or suggest that wherein the second copper foil contracts to a larger extent than the first copper foil during the hot pressing, Examiner respectfully disagrees. Similar to the above analysis, since Kataoka discloses in (col. 7, lines 52-65 and FIG. 2) a process for producing a copper

clad laminate comprising hot pressing under the condition of 175-200° C the first copper foil 4 and second copper foil 2 assembly to produce a laminate structure. This temperature range for hot pressing of Kataoka is equivalent to the hot pressing temperature of the Applicants' invention, which is 180° C (see Applicants' specification on page 16, lines 4-10). Thus, the disclosed process as taught by Kataoka would obtain the recited results (i.e., "wherein the second... contracts to a larger extent than the first...") because the same materials are being treated in the same manner as in the instant claimed invention.

For these reasons, Examiner holds the rejection proper.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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Correspondence

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khiem D. Nguyen whose telephone number is (571) 272-1865. The examiner can normally be reached on Monday-Friday (8:30 AM - 5:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew S. Smith can be reached on (571) 272-1907. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

K.N.
March 12, 2007

Brook Kebede
BROOK KEBEDE
PRIMARY EXAMINER